



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-90B BYPASS RATIO: 8.4  
 UNIQUE ID NUMBER: 3GE065 PRESSURE RATIO ( $\pi_{00}$ ): 39.8  
 COMBUSTOR: DAC II  
 ENGINE TYPE: TF RATED THRUST ( $F_{00}$ ) (kN): 418.1

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.6	16.1	72.1	0.6
AS % OF ORIGINAL LIMIT	3.1	13.6	60.3	3.8
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			75.4	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			83.3	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			91.8	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			103.4	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 - DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	3.414	0.04	0.15	53.21	2.0
CLIMB OUT	85	2.2	2.772	0.04	0.15	39.13	1.8
APPROACH	30	4.0	0.899	0.07	0.98	17.47	1.8
IDLE	7	26.0	0.300	0.39	12.70	5.86	1.8
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1193	218	6231	28459	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				5	5	5	5
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.5	14.9	68.1	
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.25-0.84	13-16.7	64.1-71.9	0-2.03

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.5-98.6
TEMPERATURE (K)	283-301
ABS HUMIDITY (kg/kg)	0.0036-0.0151

### FUEL

SPEC	Jet A
H/C	1.91-1.94
AROM (%)	18.1-19.3

MANUFACTURER: General Electric Company  
 TEST ORGANIZATION: GE90 Eval Engineering  
 TEST LOCATION: Site IIID, PTO, Peebles, Ohio  
 TEST DATES: 24/04/1997-19/06/1997

### REMARKS

1. GE Report R96AEB292.
2. Engine S/S 900-173, 900-166 & 900-167
3. DAC II combustor

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)